

**REMARKS**

This responds to the Office Action mailed April 4, 2007, for the above application in which claims 144, 145, 155-158, 160, 164, 165 and 167-172 and new claim 1615 are now pending. Reconsideration of the application and claims in light of the following is requested.

**Amendment to the Title**

The Office Action raised an objection to the title as not being descriptive of the claimed invention. The title has now been amended. Withdrawal of the objection is respectfully requested.

**Drawing Objection**

In the Office Action, drawings 1A, 1B, 3 and 4 were objected to as failing to comply with 37 CFR 1.121(d) because the text is illegible. Appropriately marked "Replacement Sheets" for Figures 1A, 1B, 3 and 4 are attached. Entry of these sheets is requested. It is respectfully submitted that the drawings now comply with 37 CFR 1.121(d).

**Section 112 Rejections**

In the Office Action, claims 156 and 168-170 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 156 and 168-170 have been amended and are now definite. Withdrawal of the rejections of those claims under section 112 is respectfully requested.

**Art Rejections**

In the Office Action, claims 144, 155-156, 164-165 and 167-170 were rejected under 35 U.S.C. 102(b) as being anticipated by Bonola, U.S. Pat. No. 5,706,514 (Bonola). Applicant respectfully disagrees.

Bonola discloses a conventional multiprocessor configuration in which each of the processors executes its own thread from memory but are interconnected in a form of master-slave relationship. When a particular processor of Bonola executes its thread it is a master. When it receives delegated instructions (because of a mode mismatch or busy condition) it is a slave. In all cases, the various processors are all complete processors that may run in different modes.

In contrast, amended claim 144 recites “obtaining an execution instruction, wherein the execution instruction is obtained at one of at least two processing resources of a first type” and “determining whether an operation-code within the execution instruction should be delegated to an other processing resource of a second type different from the first type and shared by at least two processing resources of the first type” which is different and distinguishes over Bonola because Bonola lacks the processing resource of the second type that is shared by at least two processing resources of a first type and the second type is different from the first type.

This is a marked distinction over Bonola. Accordingly, claim 144 should be allowed.

All of the remaining pending claims (except claim 1615) depend, directly or indirectly from claim 144 and are thus allowable for the same reason.

Still further, many of the dependent claims add aspects that independently distinguish over Bonola. For example, claim 155 expressly recites that “the operation-code indicates a type

of resource on which to execute.” There is no such disclosure in Bonola – different modes are not the same as different types of resources. Bonola does not disclose a operation code that indicates a “type of resource on which to execute.”

Amended claim 157 expressly recites that the processing resource of the first type is an integer processing unit. Bonola does not disclose the recited integer processing unit. Thus, claim 157 is allowable for this separate and independent reason.

Similarly, amended claim 158 expressly recites that the processing resource of the second type is a mathematical processing unit. Bonola does not disclose the recited mathematical processing unit. Thus, claim 158 is allowable for this separate and independent reason.

Amended claim 160 expressly recites that the processing resource of the second type is a vector processing unit. Bonola does not disclose the recited vector processing unit. Thus, claim 160 is allowable for this separate and independent reason.

Amended claim 164 expressly recites that the processing resource of the second type is an execution-instruction processing cache. Contrary to the assertion in the Office Action, the use of the slave processor’s registers to hold data is not an instruction cache, let alone an “execution-instruction processing cache” as recited in that claim. Consequently, amended claim 164 is not anticipated.

In addition, claims 144 and 171-172 were rejected as anticipated by under 35 U.S.C. 102(e) as being anticipated by Butterworth et al., U.S. Pat. No. 6,907,454 (Butterworth). Applicant respectfully disagrees.

Like Bonola, Butterworth also discloses a multiprocessor master-slave arrangement in which the master processor is an IBM Power PC 705 and the slave is a Power PC 403

microprocessor. In other words, like Bonola, in Butterworth both the master and slave processors are complete microprocessors that execute independent instruction threads from memory. Accordingly, all of the arguments made above with respect to Bonola apply with equal force to Butterworth. Accordingly, claim 144 is not anticipated by, and hence patentable over, Butterworth for the same reasons.

Claims 171 and 172 each depend from claim 144 and are patentable for the same reasons.

In addition, claim 145 was rejected under 35 U.S.C. 103(a) as being unpatentable for obviousness over Butterworth. Applicant respectfully disagrees. The Office Action argues that it would have been obvious to “complete the instruction-delegation method disclosed in Butterworth in a single cycle.” Even assuming that Butterworth does perform the method of claim 144 (which it unequivocally doesn’t) the Office Action has tacitly acknowledged that Butterworth would still not perform the method of claim 144 in a single cycle. Moreover, it is doubtful that Butterworth could even be modified to do so without a wholesale redesign of that system – a nontrivial task to say the least. It is improper to reject a claim for obviousness over prior art where, to meet the claim, the prior art would have to be modified in nonspecific and unspecified significant ways. The rejection should be withdrawn.

If the Patent Office maintains the rejection of claim 145 on this ground, it is respectfully requested that the Office identify exactly how one would have purportedly modified Butterworth in a way that would have achieved the claimed invention and how the Office knows that such a modification to Butterworth would still work.

Claims 157-158 and 160 were rejected for obviousness over Bonola in further view Mohamed et al., U.S. Pat. No. 5,978,838 (Mohamed). Applicant disagrees.

First, claims 157-158 and 160 all ultimately depend from allowable claim 144.

Accordingly, those claims are allowable for the same reasons.

In addition, with respect to those claims, the respective “integer processing unit,” “mathematical processing unit” and “vector processing unit” are all specifically defined in the instant application, as applicant is entitled to do. They are not what might be conventionally referred to by those terms. See, for example, the Application at p. 12, and the specification generally. Thus, while the terminology may be the same, the expressly recited components are completely different in Mohamed. None of the cited art discloses, teaches or remotely suggests components such as the “integer processing unit,” “mathematical processing unit” and “vector processing unit” as those terms are used in the instant application. Accordingly, the alleged combination of Bonola and Mohamed would not achieve or render the claimed invention obvious.

New claim 1615 similarly is neither anticipated nor rendered obvious by the cited references, taken alone or in any combination for reasons similar to those above. Accordingly, claim 1615 is also allowable and early, favorable action in that regard is respectfully requested.

**Miscellaneous Matters**

Certain of the other pending claims have been amended, however it is respectfully submitted that the additional amendments were not necessitated by, or made for any reason related to, the prior art or for patentability in general. In most cases, the amendments were made to improve readability or for maintaining consistency among the claims.

**CONCLUSION**


It is respectfully submitted that all of the pending claims are allowable and early favorable action in that regard is solicited. In the event any issues remain that could potentially be resolved by telephone, the Examiner is urged to contact the undersigned at the number indicated below. Should any additional fee(s) be required for the entry of this Amendment, the Commissioner is hereby authorized to charge Deposit Account No. **13-4500**, Order No. **4403-4000US6**.

Respectfully submitted,

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